



## Southern Open Talus

Open plant communities on steep talus slopes, usually below cliffs or bedrock outcrops in rugged terrain in southeastern Minnesota. Dominated by lichens or mosses, with sparse cover of trees or herbaceous plants.

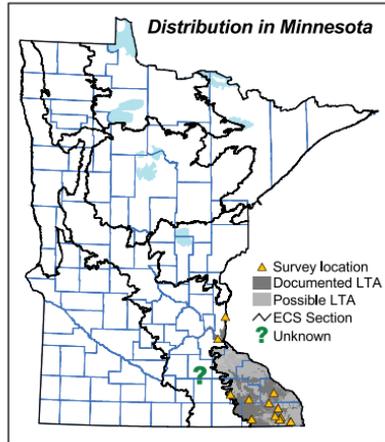
### Vegetation Structure & Composition

Description is based on summary of plant species lists and field notes from 18 talus slopes (almost entirely in PPL).

- **Lichen** and **bryophyte** cover is high. Lichens are the dominant cover on dry sites and are codominant with mosses and liverworts on mesic sites. The weedy *Plagiomnium cuspidatum* is the most common moss species. More characteristic bryophyte species include the mosses *Anomodon attenuatus*, *A. rostratus*, *Bryoerythrophyllum recurvirostre*, *Gymnostomum aeruginosum*, and *Timmia megapolitana*, and the liverworts *Conocephalum conicum*, *Marchantia polymorpha*, and *Preissia quadrata*. Rare bryophyte species that may be present on mesic sites include *Bryhnia graminicolor*, *Mannia fragrans*, *Mnium stellare*, *Myurella sibirica*, and *Seligeria* species.

- **Herbaceous plant** cover is sparse (5–25%) on dry sites (see CTs23a below) and patchy to continuous (25–100%) on mesic sites (CTs23b). Typical species on mesic sites include bulblet fern (*Cystopteris bulbifera*), walking fern (*Asplenium rhizophyllum*), wood nettle (*Laportea canadensis*), touch-me-nots (*Impatiens capensis* and *I. pallida*), and other species common in Mesic Hardwood Forest (MH) communities. Leafcup (*Polymnia canadensis*) is characteristic on dry sites.

- **Tree** and **shrub** cover is absent to patchy (0–50%), although the community can be shaded by trees in adjacent MH or Fire-Dependent Forest/Woodland communities. Canada yew (*Taxus canadensis*) is typical on mesic sites.



### Landscape Setting & Soils

- **Steep stream-dissected bedrock bluffs**—Occasional. Present on steep slopes in dissected bedrock terrain where little of the original plateau remains as interfluvies between stream valleys. Rock types include limestone and dolomite (and possibly sandstone, especially sandy dolostone). The substrate is colluvial in origin, often with organic silty soils mixed among rock fragments of various sizes. Some talus slopes have blocks averaging over 24in (60cm) in diameter, but most recorded averages are less than 6in (15cm). There is also often considerable variation in block size from upper to lower portions of most talus slopes, with smaller blocks at the upper part of the slope near the base of the parent cliff or outcrop (which is the source of the talus) and larger blocks at the bottom of the slope. Bedrock outcrops are often present as inclusions within the community. (PPL; very local in St. Paul–Baldwin Plains & Moraines and Oak Savanna in MIM)

### Natural History

Species in talus communities, especially dry sites, are exposed to somewhat greater environmental extremes than species in surrounding terrestrial communities, including rapid fluctuations in substrate temperature, high desiccation rates, limited nutrient availability, and stress caused by shifting substrates. Minimal soil development limits opportunities for colonization by vascular plants, which are generally restricted to mossy mats or pockets of soil that have accumulated between talus blocks. Rock slides triggered by rock fractured from escarpments upslope are major but rare events that



disrupt plant community equilibrium on talus slopes and can also remove trees. On north- and east-facing slopes, the community is generally shady and mesic, similar to or moister than surrounding forests and often with considerable soil present among the talus blocks. On south- to west-facing slopes, the community is generally drier than surrounding forests, and soil development is minimal.

### **Similar Native Plant Community Classes**

#### ● **CTs46 Southern Algific Talus**

CTs46 occurs on steep bluff slopes, including settings similar to CTs23, and shares a number of species with mesic occurrences of CTs23 (CTs23b). CTs46, however, is characterized by cold microclimates that support northern species absent from CTs23, including naked miterwort (*Mitella nuda*), moschatel (*Adoxa moschatellina*), Iowa golden saxifrage (*Chrysosplenium iowense*), tall lungwort (*Mertensia paniculata*), northern oak fern (*Gymnocarpium robertianum*), alpine enchanter's nightshade (*Circaea alpina*), dwarf alder (*Rhamnus alnifolia*), and northern black currant (*Ribes hudsonianum*). CTs46 also differs from CTs23 by supporting remnant populations of rare Pleistocene land snails.

#### ● **CTs12 Southern Dry Cliff and CTs33 Southern Mesic Cliff**

CTs12 and CTs33 share a number of species with CTs23, especially in the common situation where talus slopes are associated with cliffs. Cliffs are easily differentiated from talus slopes, however, based on substrate (i.e., solid vertical bedrock vs. sloping talus).

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### **Native Plant Community Types in Class**

Plant species composition has not been systematically sampled or analyzed across the range of CTs23, but the class is divided into two community types based on the amount of shade and moisture.

#### ● **CTs23a Dry Limestone - Dolomite Talus (Southern)**

Dry to dry-mesic, open communities with sparse shrub or tree cover. Lichens are the predominant cover. Mosses are frequent, and vascular plants are sparse, with leafcup commonly present. Talus fragments are generally moderate- to large-sized (6in to > 36in [15cm to > 90cm] in diameter). CTs23a is occasional on steep south- to west-facing slopes, mostly below limestone or dolomite cliffs and outcrops in the Blufflands Subsection in the PPL.

#### ● **CTs23b Mesic Limestone - Dolomite Talus (Southern)**

Mesic to wet-mesic, open communities with patchy shrub or tree cover. Mosses and liverworts are often the dominant cover throughout, with lichens occasional to common on talus blocks. Characteristic vascular plants include bulblet fern, walking fern, touch-me-nots, and Canada yew. Talus fragments are generally small- to moderate-sized (6in to > 12in [15cm to > 30cm] in diameter), although they are often obscured by thick moss mats and accumulated soil. CTs23b is occasional on steep north- to east-facing slopes, mostly below limestone or dolomite cliffs and outcrops in the Blufflands Subsection in the PPL.